

ABSTRACT

A process for producing a tape-like material uniformly containing highly pure single-walled or multi-walled carbon nanotubes and a tape-like material produced thereby with a high density highly pure single-walled or multi-walled carbon nanotubes; a high-performance field emission electrode including the tape-like material; and a process for producing the field emission electrode. The ~~For synthesis of carbon nanotubes~~ are synthesized by arc discharge, wherein an inert gas or inert gas-containing mixed gas is jetted onto a cathode (2) ~~comprising~~ having a carbon material from the inside (11a) of a hollow electrode (11) used as an anode, and simultaneously an arc is generated to form a path of arc discharge along the a stream of the gas. ~~Consequently, the cathode spot is prevented from irregularly moving, and thus highly pure carbon nanotubes can be produced.~~ At the same time, by relative movement of the ~~relatively moving both~~ electrodes, ~~so as to move~~ the cathode spot of the arc (3) is moved on the cathode, and the synthesized carbon nanotubes are formed into a tape.